13. (Amended) A process for removing contaminants from a site, said contaminants including dissolved hydrocarbon products, said process comprising:

injecting gas as bubbles including ozone gas under conditions to break carbon-carbon bonds in the contaminants in the site with injecting further comprising:

alternating water injection with bubble production to provide an even dispersion of bubbles, with the bubbles having a bubble diameter of less than about 200 microns, the contaminants being pulled into the bubbles to decompose the contaminants in a reaction in the bubbles in the presence of water.

Please add claims 14-40, as follows.

14. The method of claim 13 wherein the hydrocarbon products contaminants are dissolved chlorinated hydrocarbons and dissolved hydrocarbon petroleum products.

15. The method of claim 13 wherein injecting gas as bubbles occurs through a microporous diffuser having 5-50 micron channel size resistance to flow over 1 to 3 psi, and with an annular pack of packing material.

16. The method of claim 13 wherein injecting gas as bubbles occurs through a microporous diffuser disposed on end of a narrow diameter pipe riser to reduce the residence time in the riser volume.

17. The method of claim 13 wherein injecting gas as bubbles occurs through a shielded microporous diffuser, which is injected to the soil formation, the shielded diffuser having microporous material molded around an internal metal perforated tubing and attached to an anchor which pulls the bubble generator out when the protective insertion shaft is retracted.

18. The method of claim 13 further comprising:

pushing a shaft to a desired depth and inserting a bubble generator through the shaft the bubble generator having a molded tubing and the shaft having a drive detachable point, and

pulling the shaft upwards, pulling off the detachable drive point and exposing the bubble generator.

19. The method of claim 13 wherein alternating water injection with bubble production promotes continuous movement of microbubbles through porous aquifers.

20. The method of claim 13 wherein alternating water injection with bubble production promotes continuous movement of microbubbles through porous aquifers without coalescing or adhesion of microbubbles.

21. The method of claim 13 wherein injected air/water bubbles move as a fluid through the aquifer without fracturing or channeling in the aquifer to promote even distribution and efficiency of exchange of ozone with contaminants.

22. The method of claim 13 wherein pulsing and injecting of gas/water are performed under conditions to move the bubbles on a pressure wave for lateral distribution in the aquifer, with the pressure wave having an amplitude above a critical bubbling pressure and below a fracturing pressure for the formation.

23. The method of claim 13 wherein pulsing comprises:

causing re-circulation of water to assist in producing and promoting vertical lift adjacent the well.

24. A method comprising:

producing microencapsulated ozone to enhance and promote an in-situ stripping of volatile organics while simultaneously terminating a normal reversible Henry's reaction.

25. The method of claim 24 wherein microencapsulated ozone is microencapsulated in water, a gas/gas/water reaction is promoted for decomposition of highly volatile organic compounds by which ozone can react with carbon atom bonds to decompose molecules.

26. The method of claim 24 wherein the reaction is an aqueous remediation promoting simultaneous volatile organic compound in-situ stripping and gaseous decomposition, in the presence of water.

27. The method of claim 24 wherein the bubbles substantially accelerate a transfer rate of volatile organic compounds from aqueous to gaseous state.

28. The method of claim 24 wherein the ozone increase the rate of extraction by maintaining a low interior concentration of the volatile organic, while degrading the volatile organic by a gas/gas/water reaction.

29. The method of claim 24 wherein the compounds treated include halogenated volatile organic compounds, vinyl chloride, and petroleum compounds.

30. The method of claim 24 wherein the removal occurs in saturated soils or unsaturated, but wet soils, without vacuum extraction to recover remaining solvents.

31. The process of claim 24 further comprising:

evaluating the site to identify contaminants present in the site and to match bubble size to soil porosity characteristics of the site.

32. The process of claim 24 further comprising:

installing a vertical injection well including a microporous diffuser coupled to a source of air and ozone.

33. The process of claim 32 further comprising:

selecting of appropriate bubble size distribution to optimize gaseous exchange in the bubbles; and

programming a wave form of pulsed gas/water injection according to site conditions including porosity of surrounding site materials adjacent the microporous diffuser.

34. The process of claim 32 further comprising:

injecting and distributing microbubbles of the gas under pressure to provide a recirculating a wave form to assist flow distribution in the site.

35. The process of claim 32 further comprising:

matching injection rates to soil conditions on the site to avoid fracturing of site materials adjacent the microporous diffuser.

36. The process of claim 32 wherein the microfine bubbles of oxidizing gas extract volatile dissolved hydrocarbons, while encapsulated ozone decomposes the volatile dissolved hydrocarbons by providing even distribution of microbubbles into an aquifer having sand, with the substrate material acting as co-reactant with the gas for decomposing the volatile dissolved hydrocarbons in a gas/gas/water reaction.

37. A sparging system for in-situ removal of contaminants from soil and an associated subsurface groundwater aquifer at a site, the apparatus comprising:

a well;

microbubble generator, disposed in the well, to produce microbubbles for extracting contaminants from groundwater in a gas/gas/water reaction;

an ozone source coupled to the microbubble generator to produce microbubbles encapsulating ozone to enhance extraction of volatile dissolved contaminants for in-situ decomposition;

a pump for forming a pressure wave for assisting in dispersion flow of microbubbles;

a co-reactant material to act as co-reactant with the gas for decomposing the contaminants in the gas/gas/water reaction;

lateral dispersions for alternating pumping and bubble injection to maximize dispersal of bubbles within and outward from the well casing, and to provide a uniform dispersion of the bubbles as they travel through the site formation.

38. The apparatus of claim 37 further comprising:

packing material disposed about the microbubble generator having a porous structure matching the condition of porosity of the soil.

39. The apparatus of claim 37 further comprising:

remote sensing with pressure monitoring and groundwater sensing to remotely monitor and regulate mixing operation of the system.

40. The apparatus of claim 37 wherein the microbubble generator is a microporous diffuser having porosity matched to the soil porosity.